

1500 WATT TVS COMPONENT



DO-214AB PACKAGE

APPLICATIONS

- Power Supply
- AC/DC Applications
- Telecom

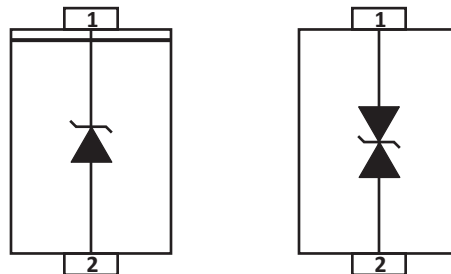
FEATURES

- Compatible with IEC 61000-4-2 (ESD): Level 4 - Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20 μ s Waveform
- Glass Passivated Chip
- 1500 Watts Peak Pulse Power per Line (tp = 10/1000 μ s)
- Low Leakage Current
- Bidirectional and Unidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Approximate Weight: 0.248 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 16mm Tape and Reel Per EIA Standard 481
- Terminal: Solderable per MIL-STD-750, Method 2026
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------|------------|-------|
| Operating Temperature | T_A | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |
| Peak Pulse Power (tp =10/1000µs) - See Figure 1 and Note 2 | P_{PP} | 1500 | Watts |
| Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$ | P_D | 6.5 | Watts |
| Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2) | I_{FSM} | 200 | Amps |
| Maximum Instantaneous Forward Voltage at 100A - Unidirectional Only (Note 3) | V_F | 3.5/5.0 | V |

NOTE

1. Non-repetitive current pulse per Figure 2 and derated above $T_A = 25^\circ\text{C}$ per Figure 2.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3. $V_F < 3.5\text{V}$.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART NUMBER (Notes 1-2) | DEVICE MARKING | REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS | BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ VOLTS | | TEST CURRENT @ I_T mA | MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_P V_C VOLTS | MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS | MAXIMUM REVERSE LEAKAGE CURRENT @ V_{RWM} I_R µA |
|----------------------------|----------------|---|--|-------|-----------------------------------|--|---|---|
| | | | MIN | MAX | | | | |
| | | | SMCJ5.0C | BDD | | | | |
| SMCJ5.0CA | BDE | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 163.0 | 2000 |
| SMCJ26A | GFE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 35.6 | 5 |
| SMCJ33A | GFM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 28.1 | 5 |
| SMCJ36A | GFP | 36.0 | 40.0 | 44.20 | 1 | 58.1 | 25.8 | 5 |

NOTE

1. Suffix 'A' denotes 5% tolerance.
2. Suffix 'C' denotes a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

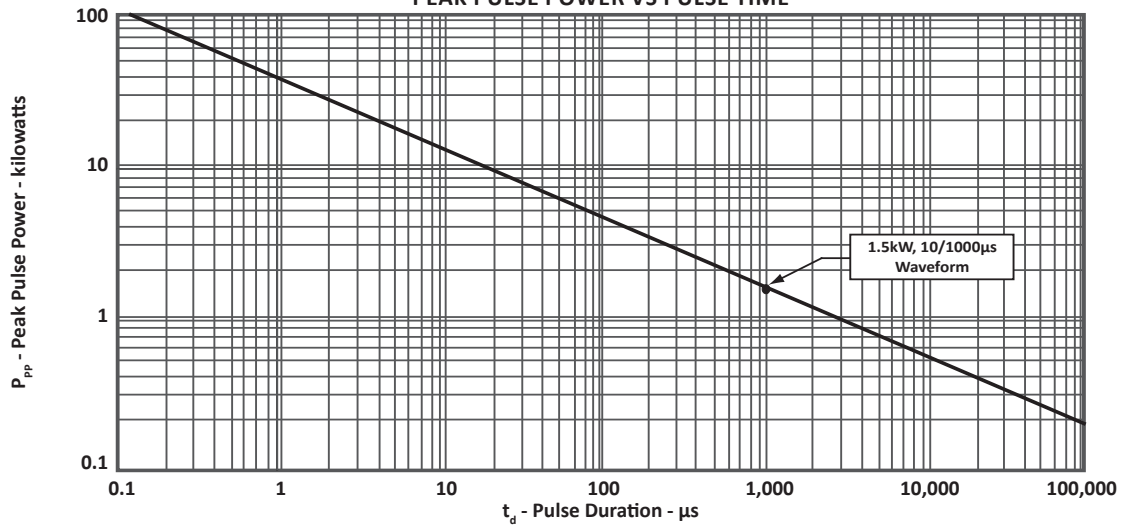


FIGURE 2
PULSE WAVEFORM

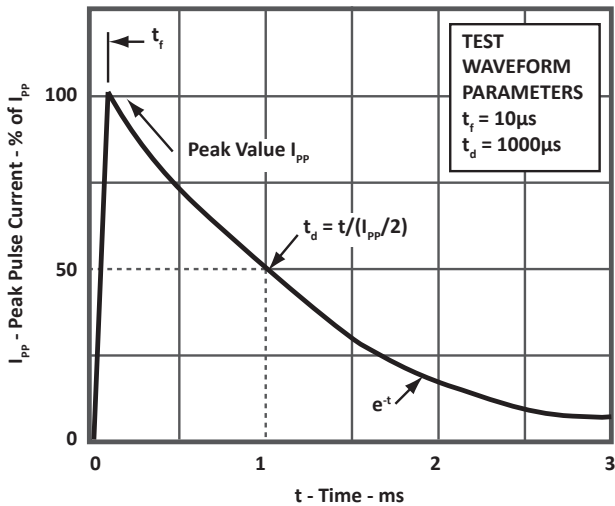
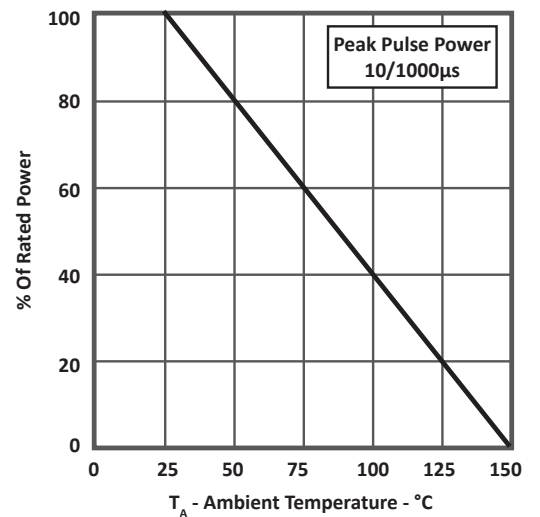


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
TYPICAL JUNCTION CAPACITANCE

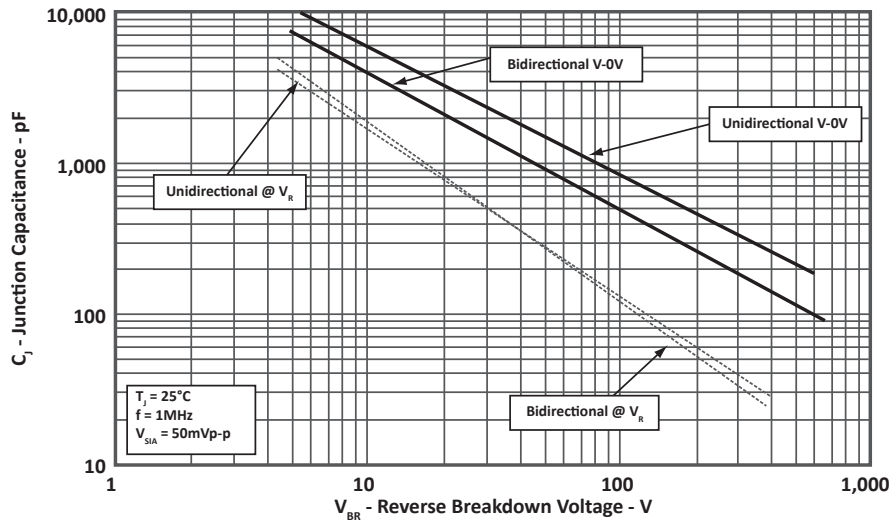


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

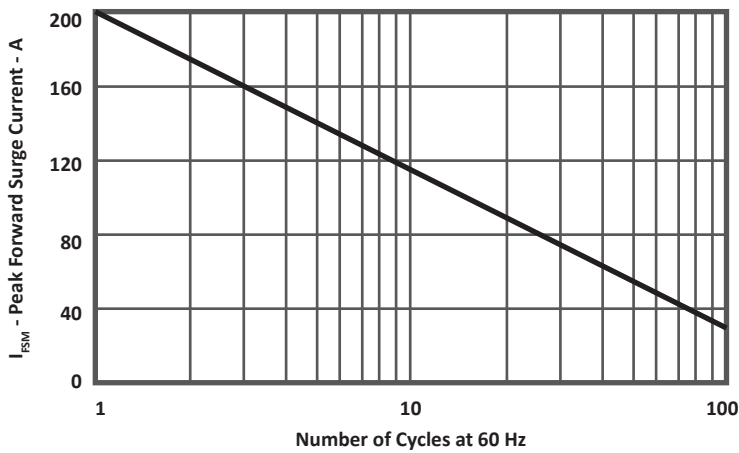
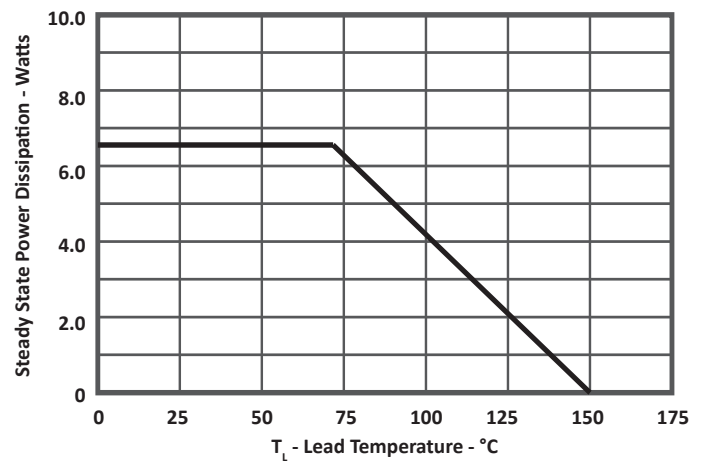


FIGURE 6
STEADY STATE POWER DERATING CURVE



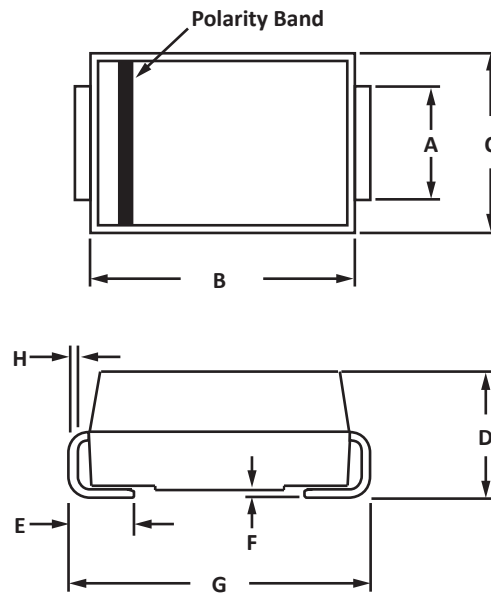
DO-214AB PACKAGE INFORMATION

OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.86 | 3.16 | 0.114 | 0.126 |
| B | 6.52 | 7.02 | 0.260 | 0.280 |
| C | 5.52 | 6.15 | 0.220 | 0.245 |
| D | 1.98 | 2.59 | 0.079 | 0.103 |
| E | 0.75 | 1.51 | 0.030 | 0.060 |
| F | 0.00 | 0.20 | 0.000 | 0.008 |
| G | 7.64 | 8.02 | 0.305 | 0.320 |
| H | 0.15 | 0.30 | 0.006 | 0.012 |

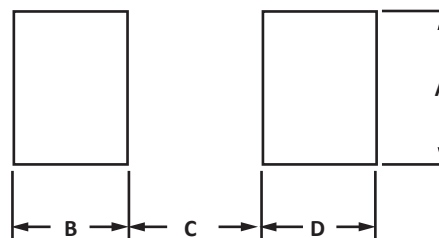
NOTES

1. Dimensions are exclusive of mold flash and metal burrs.

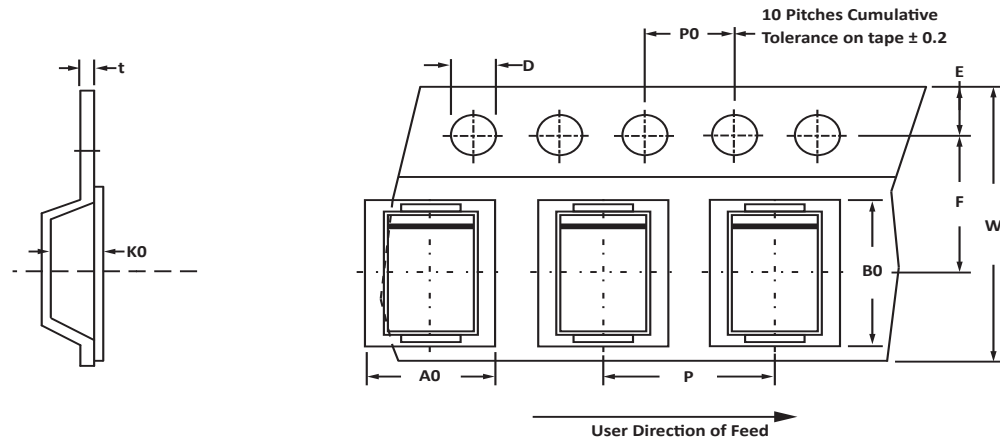


PAD LAYOUT DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.17 | - | 0.124 | - |
| B | 1.49 | - | 0.059 | - |
| C | - | 4.60 | - | 0.180 |
| D | 1.49 | - | 0.059 | - |



TAPE AND REEL



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P | tmax |
|-------------|------------|-------------|-------------|-------------|-------------|-------------|------------|--------------|-------------|-------------|------|
| 330mm (13") | 16mm | 6.05 ± 0.10 | 8.31 ± 0.10 | 2.54 ± 0.10 | 1.55 ± 0.05 | 1.75 ± 0.10 | 7.5 ± 0.10 | 16.00 ± 0.30 | 4.00 ± 0.10 | 8.00 ± 0.10 | 0.4 |

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T13 = 13" Reel - 3,000 pieces per 16mm tape.
- Marking on Part - marking code (see page 2), date code, logo and cathode defined by polarity band.

ORDERING INFORMATION

| BASE PART NUMBER (xx = Voltage) | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------------------------|-----------------|-------------|----------|-----------|----------|
| SMCJxA/ SMCJxxCA | N/A | -T13 | 3,000 | 13" | N/A |

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF and related high frequency products.

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